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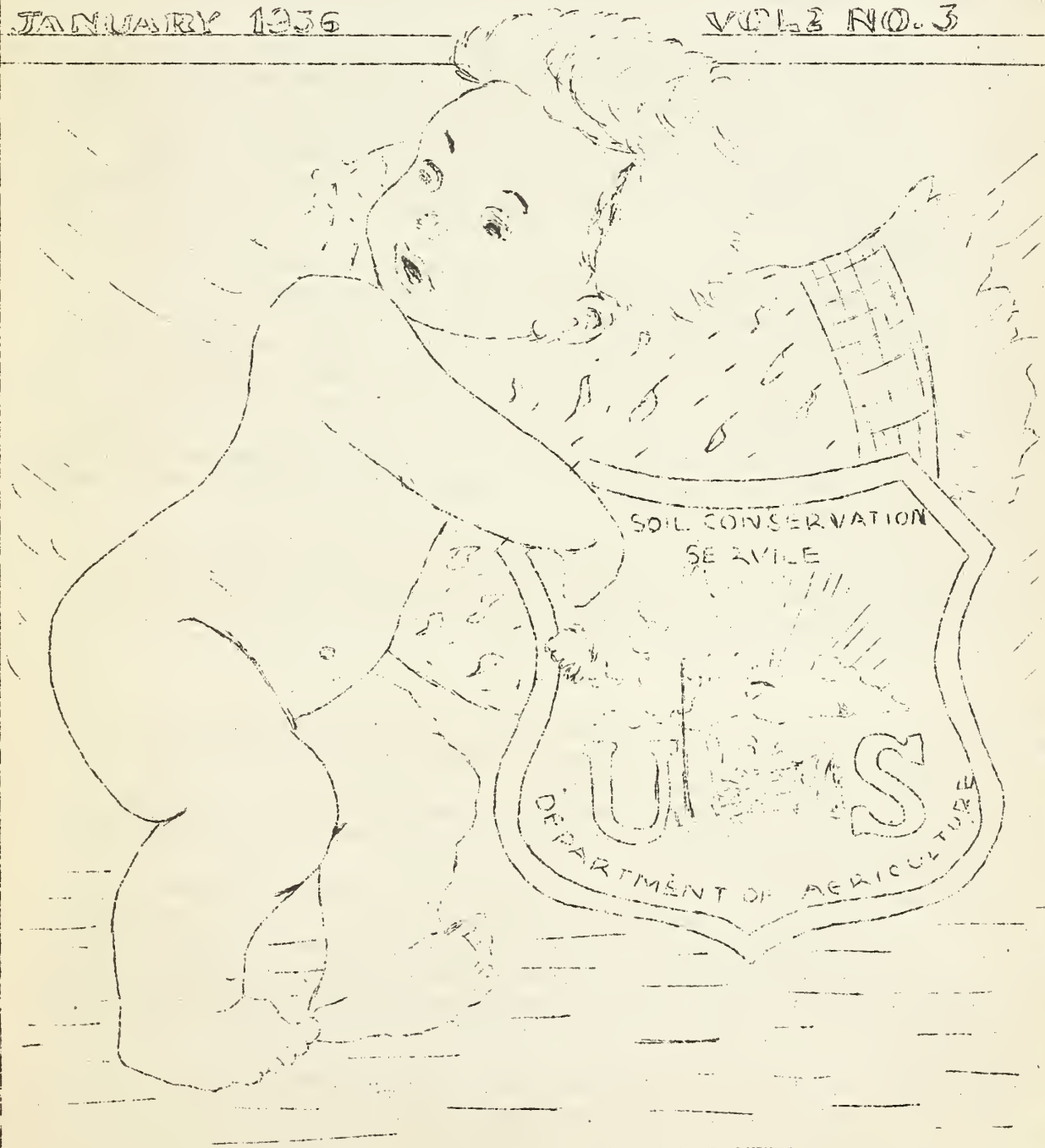
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THE
BROWN CREEK WATERSHED

WADESBORO, N. C.

JANUARY 1936

VOL. 3 NO. 3



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Washington, D. C.

THE BROWN CREEK WATERSHED is published by the Soil Conservation Service Staff at Wadesboro, North Carolina as a part of the program to conserve the soil, demonstrate the use of erosion control work to farmers as a part of their farming methods, show the benefits, both present and future, of a co-ordinated soil saving program, and maintain a spirit of good fellowship with the citizens of the community while endeavoring to serve.

J. H. Stallings,
State Coordinator.

J. E. Michael,
Project Manager.

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1935 is gone and we greet the New Year in its youth - and, as is common to youth, it suggests a restlessness for action, straining in its youthful vigor to do things. So may we catch this spirit for the more noble actions, resolving that they will be directed to the betterment of those conditions that affect the general well-being of all. Such is the resolve of this office. We, too, are young as an organization, but the problems confronting us are as old as civilization, and the tasks involved are a challenge to the best within us.

The functions of the Soil Conservation Service are mainly educational, and nothing worthwhile will be accomplished towards its aims unless the people as a whole are committed to the purposes and methods of proper land use and soil preservation. This is one of the major tasks with which the present generation is confronted. And indeed THIS IS THE GENERATION to which this task is committed. Soil depletion in America had not reached the crisis period a generation ago, for then there was still plenty of new lands to be had. Should the present trend of land exploitation be continued another 40 years, land conditions in a large portion of our country would be beyond man's efforts to repair.

So it is with the knowledge of the importance and the urgency of the task before us, that we, workers of the Soil Conservation Service, invite the counsel and cooperation of everyone as co-laborers, that 1936 will be a year of achievements of which everyone will be glad to have had a part.

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The Anson County Soil Conservation program is making good progress.

The county program which got under way during September is being well received by the farmers of Anson County.

The E. C. W. Camp is devoting the major part of its time to work in the county area in cooperation with the farm owners who are adopting erosion control practice on their farms.

Agreements have been made with 18 land owners, comprising 5,403 acres. 82 miles of terraces have been built on 680 acres at a cost of about \$2.00 per acre. Strip cropping plans have been made for 344 acres, also 102,788 square yards of terrace outlets have been seeded or sodded. 24,398 lineal feet or more than $4\frac{1}{2}$ miles of terrace outlet channels have been constructed. All of the above work, except terrace construction, has been done by the E. C. W. Camp.

Any farmer who is interested in the soil saving program for his farm should communicate with J. W. Cameron, County Agent.

AGRONOMY DEPARTMENT

We are glad to find the farmers in the Brown Creek Area practicing contour cultivation as far as row crops are concerned. This practice greatly reduces the hazards of soil erosion and it shows a great spirit of cooperation among the farmers and the Soil Conservation Service. As the row or cultivated crops occupy approximately 78% of the open land in the area, this practice is a valuable asset to the farmers, but let us endeavor to make contour tillage 100% in the area.

Observation has shown us that contour plowing, harrowing and drilling are just as important in erosion control as contour planting and cultivation of the row crops. If we take care of the little things the great ones are less likely to appear. So begin by plowing your fields on the contour, then harrow on the contour and then drill your grain on the contour.

Each little furrow made by plow, harrow or drill acts as a channel to carry water when not on the contour. As the water follows the channels it carries soil with it and in a short time we find that gully and sheet erosion is the result of this practice. Not only is soil loss the only bad effect, but it leads the water off the field instead of conserving it for the crop during drought. This water that should and would be held on the field if contour tillage was practiced goes along with the soil and increases the flood hazard in the valleys below.

Last but not least contour tillage enables one to work on a level and this takes less draft to pull the load. When livestock are used this is the humane method of tillage. When power implements are used it reduces cost of operation.

Reduce the menace of soil erosion, and flood by contour tillage. Save this much needed water for the crops in time of drought. Reduce operation costs by working on the level. Give your team the advantage of pulling on the level. Make your area the best area by tilling 100% on the contour.

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In the past the Agronomy Department in the Brown Creek Area has emphasized lespedeza in the rotation. Large amounts of lespedeza seed, with fertilizer and lime have been issued to the Co-operators and the result has been gratifying as there has been an enormous increase in the lespedeza acreage, not only in the area but in the county.

Now we find ourselves confronted with another problem of getting the Co-operators of the area to practice strip-cropping universally where practical. This method of farming will allow the farmer to operate his farm normally and at the same time introduce a system of farming, which is conceded to be one of the greatest single items in erosion control.

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This Fall and Winter the Agronomy Department has worked diligently, explaining the advantages of strip-cropping to the Co-operators, and in all parts of the area we have found them favorable to this system of cropping.

Cotton and corn occupy a greater part of the land in the area. The dominant rotation is corn and cotton followed by small grain and lespedeza. The lespedeza remains on the land one year and then the rotation is repeated. This year we hope to have a large percent of the Cooperator strip-crop these lespedeza fields instead of planting the entire field to corn or cotton. On fields that already are terraced we want the Cooperator to plow up every other terrace interval and plant corn or cotton. This leaves every other terrace interval in lespedeza. The interval will be rotated as if the entire field was in corn or cotton. The following year the same practice is followed on the other lespedeza interval. This always leaves one terrace interval in lespedeza.

On fields that are to be terraced but have not been, staking crews will be available to locate contour lines. This will enable the Cooperator to put the strips on the contour.

On fields that are too steep to terrace and where the Cooperator agrees to strip-crop contour lines will also be located by the staking crews.

At present there is a limited amount of lespedeza seed, fertilizer and lime to be issued to the farmers, but in no case will these items be issued if the Cooperator will not agree to strip-crop where practical.

It is hoped and sincerely believed that the farmers in the area will cooperate whole heartedly in trying to make his farm a better farm by conserving his soil and at the same time improving what he has.

Remember that seed, fertilizer and lime are available to those practicing strip-cropping and to those only.

Patrick H. Duncan,
Junior Agronomist.

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SOILS DEPARTMENT

According to authorities conducting a school for land appraisers in Oklahoma, the soil and the degree and type of erosion on the individual farm are usually the determining price factors in land appraisal. This conclusion is based upon the fact that the productivity of a farm depends almost completely upon the soil type and the erosion conditions. That is just another good reason why the detail soil survey of the Brown Creek Area was made.

Much has been said regarding the financial loss to farms caused by erosion. An economic survey conducted in Texas, which reveals in a relative way the cost of erosion, should be of interest. Note the difference in the net returns from land of different erosion classes as shown by the following table.

Erosion Class	Net Returns		Net returns per \$100 invested in machinery, equipment and workstock	Net returns per \$100 expended for labor and operating cost.
	Per Acre	Per 100 Acre Farm		
1	\$8.03	\$803.00	\$147.41	\$150.09
2	6.69	669.00	102.92	132.10
3	3.83	383.00	57.83	52.82
Increase of 1 over 3	4.20	420.00	89.58	97.27

The erosion classes correspond roughly with the classes as used in the erosion survey here.

I quote these figures because they are authentic figures, depicting not only the conditions in Texas but also our own. They show in terms of dollars and cents what the cost of erosion really is.

It seems only yesterday that White Store Township was one of the most prosperous agricultural centers in the South, its cotton being recognized even in Liverpool, England. And yet today the severity of erosion in this community is not exceeded in any extensive area anywhere in the state. As a matter of fact, two of the principle soils of the Brown Creek Area are the most erosive of North Carolina's approximately seven hundred types.

As evidence, which can be seen by all, let me offer the nine or ten thousand acres of bottom land in the watershed, made completely of soil washed from fields above. These bottoms are still being built up - and at the expense of the cultivated land which immediately reflects itself in our bank accounts.

This season of the year presents many opportunities for work tending to cut erosion damage to a minimum during the winter rains. An unprotected field or a small gully may present a real problem next Spring.

Quoting a much used phrase - "let us farm in such a manner that we, as land owners, can hear it rain with a clear conscience."

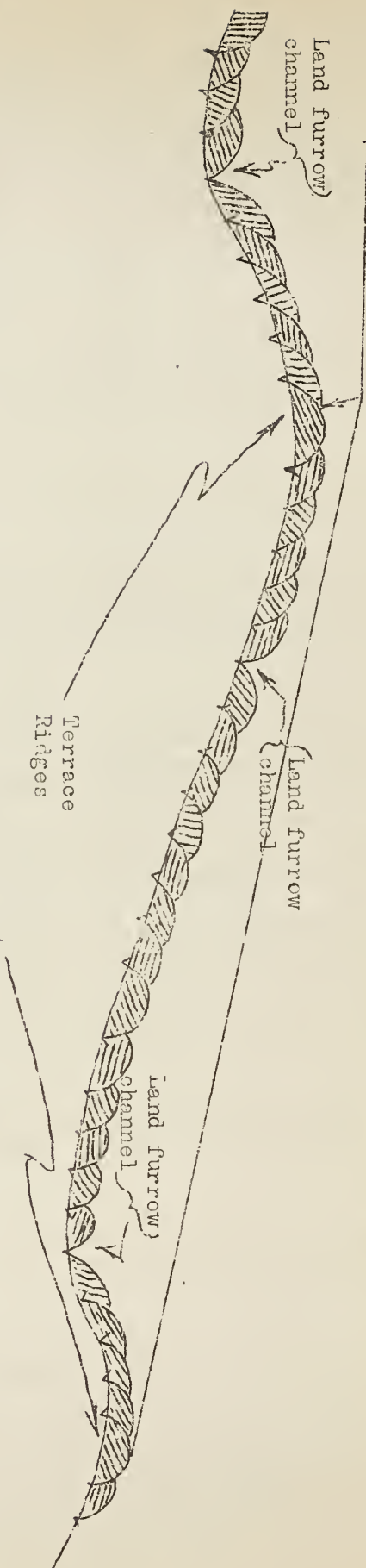
O. C. Lewis,
Assistant Soil Expert.

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"I have no light to illuminate the pathway of the future save that which falls over my shoulder from the past."

- - Patrick Henry.

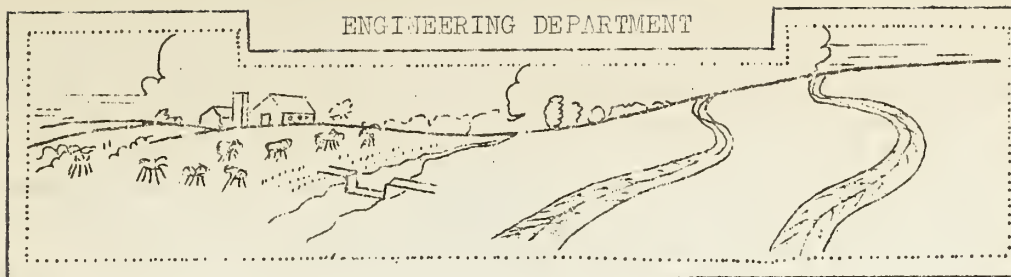
No. 1
Start listing (here) on terrace ridge and then break the strip between each two succeeding terraces as a separate strip. The location of the finishing furrow may be varied by listing more or less to one of the terraces than the other.



No. 2 One variation from this, is after starting the list on the terrace ridge as under No. 1 and continuing to the bottom of the channel on the upper side start another list 8 or 10 feet above the channel and throw the dirt up hill from the channel, then plow out the remaining strip of land.

If terraces are built large in the beginning they are easy to maintain. It is best to break terraced land parallel to the terraces, thus giving a view as above if we took out a vertical slice of the field. When one of these systems is followed no additional maintenance should be needed.

If one of the above methods of breaking is consistently followed it may be the means of not only maintaining but also of improving the terraces each time the land is plowed. Such practices will make the field a series of gentle waves. Always bear in mind the maintenance of the terrace when any tillage operation is being done.



GULLY EROSION

Several hundred acres of land in the Brown Creek area have already been abandoned as a result of severe gullying. Our problem is to find a way to prevent this destruction of our most valuable asset. To solve this problem we first must know how gullies are formed and the different factors causing them.

Gullies are formed by collection of the run-off water into natural draws from which it flows at such velocity as to eat away the soil. Large amounts of water attain such velocity on steep slopes that the resistance offered by soil and vegetable matter is overcome and as a result gullies are formed.

The agent which actually does the destructive work, the run-off water is dependant on several conditions. The intensity of rainfall, the perviousness of the soil, the vegetative cover, the organic matter in the soil, and the slope of the land.

PREVENTION OF GULLIES

It is plain that gullies must be prevented by control of run-off water. This may be accomplished by terracing, strip-cropping and the use of cover crops. Terracing aims to catch the run-off water and ease it off the field at such low velocity that no harmful erosion occurs. The whole system of terraces in a field, prevents the collection of large amounts of run-off water. However, it is very important that terrace outlets be located where there is vegetation or some other protection against gullies. If no suitable outlets are available, artificial ones such as ditches must be constructed. These should be located in natural draws.

Strip-cropping controls the run-off by providing vegetative cover of close growing crops that retard the water and allows some of it to soak in before it can cause harmful erosion.

Cover crops of close growing crops retard the run-off. They provide efficient erosion control, improve the soil, and furnish food for stock.

GULLY CONTROL

Existing active gullies must be controlled in order to prevent them from causing further damage such as eating back in fields now in cultivation, undermining buildings, eating into road banks,

undermining culverts, depositing silt on bottom land, and silting up of reservoirs and stream channels. Our methods of controlling gullies all have vegetation as their ultimate aim. In this area temporary check dams are used to retain silt and moisture in order that vegetation may be established in the gully. This vegetative growth finally replaces the structures; therefore, the height of structures must be limited to that which vegetation can hold after the structures have decayed.

Several different types of dams may be used, depending on the size of the gully, amount of run-off water to be carried, and material available. Structures should be designed so as to utilize materials available on the farm. Log sod and brush dams are very effective in small gullies of moderate slope. Bermuda is the best sod to use for this purpose in this area. Cedar and pine brush, when staked down across the gully channel form an effective check. A combination of brush and sod may be used. The brush will protect the sod, catch silt, and retain moisture thereby aiding in establishing the sod. Low or pole dams are sometimes necessary when the gully has sufficient drainage area and slope to justify their use.

In this area the general use of concrete or rock masonry dams for gully control is not advisable from an economical standpoint. However, where the drainage area is large and it is necessary to establish a permanent waterway their use may be justified.

Gullies allowed to go uncontrolled reduce the value of farm land and destroy the productivity of the soil. Why pay taxes on acres of gullied lands when the gullies can be controlled by application of the principles of gully control? It is not yet too late to fight the destruction wrought by gullies.

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There is no better time to check up on your terraces than at present. Small breaks in the terraces may have occurred that have not been mended. These require only a small amount of time to repair if done immediately, but if allowed to stand several more rains, will require much more labor. Check the breaks now while they are small. There may be some weak places in your terrace system where the terraces cross draws or small gullies. A few drag pans of earth will do these places a tremendous amount of good and serve to protect your whole terrace system. A few hours spent now on your terraces will save much labor later.

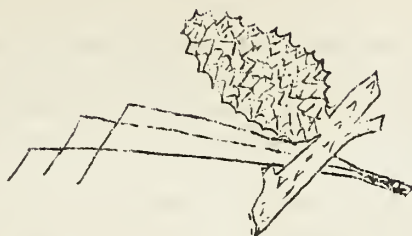
Most of the terrace outlets at present are in good shape. Help us to keep them in good condition by keeping stock from tramping on them and forming paths that later may cause gullying. Sod, brush and stakes may be used to stop washes. The sod should be tamped in place to keep water from getting under it. As a rule where brush is used it is best to stake it down.

N. F. Price,
Jr. Agri. Engr.

FORESTRY NEWS

JANUARY

1936



SOIL CONSERVATION PLANTING ACTIVITIES

Forest Tree Planting

The forestry branch of the Soil Conservation Service will have three large crews in the field establishing forest tree plantations on the farms, land that according to farm management plan should be in forest. The tree planting program began six weeks ago and will continue through the winter except when weather is below freezing. The forestry planting crews will plant about 10,000 tree seedlings every day and should average well over one-half million for the season or by April 1st.

The farmer and land-owner must help to make this program a success.

When the planting crew arrives on the farm, the land-owner or his representative should go with the crew to the prospective fields and gullied areas that should be planted. The planting supervisor will have a complete map of the farm and detail planting plans and maps of the areas for the tree seedlings. A copy of these maps and plans are available to all land-owners where trees are planted. It is the urgent desire of the Soil Conservation Service representatives to assist the farmer with his land utilization problems. The planting supervisor will demonstrate how to utilize all waste corners and abandoned fields on the farm; land too poor to produce other agricultural crops, or which, from the standpoint of erosion, overflow, or other causes is not tillable. This type of land without exception can be made to grow a good crop of trees in a remarkably short time. The areas set aside for a forest tree plantation will be planted to trees and shrubs best suited to soil type, degree of erosion, and other limiting factors; and farmers' timber needs will also be taken into consideration. The farmer must help in furnishing mulch and materials when it is necessary to use brush-matting, mulching, and check dams for an economic and effective means of controlling the spread of large gullies and washes until the soil-binding vegetation is well established. The lack of vegetation or complete ground cover on abandoned land not only causes financial loss on one field but often menaces cultivated fields and other property. The exposed unproductive soils on gullied areas do look



loss on one field but often menaces cultivated fields and other property. The exposed unproductive soils on gullied areas do look hopeless, but certain species, certain trees, shrubs and grasses have been successfully proven effective in reclaiming the soils and producing returns of wood products. Nature will do great things and all any of us can do is to assist and aid by lending a helping hand to Mother Nature.

The young tree seedlings planted are valuable and must be protected against fire and grazing. Everybody knows that timber will be needed in the future; therefore, everyone should be interested in growing trees and that they should be cared for and perpetuated as "our best friends". The younger generation should look upon the trees as a saving bank where the



interest is accumulative and the investment is permanent. Farm owners of the future should see and watch the trees planted. A forest tree plantation will add interest in lives of children and prove to be a very material asset to any farm or community.

THE POLKTON NURSERY

Many questions have circulated regarding the Polkton Nursery and its connections with the Brown Creek Project Area.

The nursery is a separate sub-project of the Soil Conservation Service administered by a separate division of the Service. It is one of the seven large Soil Conservation Service nurseries that will supply planting stock for project areas and E. C. W. Camps in North Carolina, South Carolina, and Virginia. The Brown Creek Project Area will contribute its support to the Polkton Nursery and in return the nursery will contribute to the project area.



ONE CORD OF SEASONED WOOD IS EQUIVALENT TO ONE TON OF COAL

The people of Anson County should consider themselves fortunate to have a large government nursery developing on both sides of the U. S. Highway No. 74 leading into Polkton. The nursery is still in its infancy, only two months old, but plans are already underway to raise several million tree and shrub seedlings for the 1936 - 1937 planting season. Everyone who is interested is welcome to visit the nursery and the pine seed extraction operation south of Polkton, the largest of its kind in the United States. All Soil Conservation Service representatives will be glad to answer your questions and explain the extraction and planting activities.

QUESTION - HOW DOES WOOD COMPARE WITH COAL IN FUEL VALUE?

Weight for weight, coal is the superior of wood as fuel; but in this region where there is an abundant supply of poorer timber trees that should be cut to make room for more thrifty young trees, it is economical to use wood as fuel. Many families are obliged to look for a cheaper form of fuel than coal. It is logical to turn to the fuel that is the natural resource of the community. With the large quantities of excellent fire wood available, the problem becomes one of getting wood cut in time to season properly and obtain the full value of the wood.

An individual can afford to pay more for a cord of hickory or oak, which is equivalent to a ton of coal, than he can afford to pay for a cord of pine, which is equivalent to about one-half ton of coal. Table shows the weight of our important tree species per cord and the equivalent fuel value in tons of coal.

SPECIES	WEIGHT PER CORD SEASONED	FUEL VALUE IN COAL	SPECIES	WEIGHT PER CORD SEASONED	FUEL VALUE IN COAL
Hickory	4500 lbs.	1 Ton	White Elm	3000 lbs.	2/3 Ton
White Oak	4300 lbs.	1 Ton	Honey Locust	3000 lbs.	2/3 Ton
Post Oak	4300 lbs.	1 Ton	Sycamore	3000 lbs.	2/3 Ton
Scarlet Oak	4300 lbs.	1 Ton	Longleaf Pine	3000 lbs.	3/3 Ton
Chestnut Oak	4200 lbs.	1 Ton	Pitch Pine	3000 lbs.	2/3 Ton
Pin Oak	4200 lbs.	1 Ton	Shortleaf Pine	2500 lbs.	1/2 Ton
Beech	4000 lbs.	7/8 Ton	Loblolly Pine	2500 lbs.	1/2 Ton
White Ash	3800 lbs.	7/8 Ton	Scrub Pine	2500 lbs.	1/2 Ton
Birch	3800 lbs.	7/8 Ton	Willow	2200 lbs.	2/5 Ton
Maple	3500 lbs.	3/4 Ton	Tulip Poplar	2200 lbs.	2/5 Ton
Black Gum	3500 lbs.	3/4 Ton	Cottonwood	2200 lbs.	2/5 Ton

These figures apply to air dried wood such as is usually referred to as thoroughly seasoned.

WHAT TO USE FOR FUEL

Most of our woodlots can be improved rather than depleted by the cutting of fuel wood. Our Woodland Improvement Cutting Demonstrations illustrate the proper way to obtain fuel wood and encourage rapid growth of the desirable tree. When cutting wood the following points should be kept in mind.

CUT

1. Crooked trees
2. Short, bushy crowned trees
3. Unsound or rotted trees
4. Poor timber species
5. Suppressed trees where the stand is too thick

SAVE

1. Straight trees
2. All thrifty-crowned trees
3. Sound trees
4. Good timber species
5. Enough trees to form a complete stand

WILDLIFE CONSERVATION DEPARTMENT

Recently the Soil Conservation Service officials deemed the Wildlife Conservation activities sufficiently numerous and important to establish a representative of the Department in each of the various projects in this and neighboring states. In most of the projects this Department has been properly set up correlated with agronomy, forestry, agricultural engineering and soils. The function of the Wildlife Department as stated in a memorandum from Washington is "(1) To encourage wildlife in general, especially in connection with development of lands taken out of cultivation in order to protect them from erosion with due regard for its several values, biologic as well as social; and (2) to develop an annual replaceable increment of game, fur bearers, and game fish as a means of providing supplemental compensation for lands taken out of agricultural production in correlation with methods of erosion control."

To many, not immediately connected with, or interested in the erosion control movement, the exact status of this Department as a relation to the program as a whole may not be entirely clear. However, it must be born in mind that while the Soil Conservation Service is primarily concerned with the problem of erosion control, it is also aimed at a program of proper land utilization. In this respect, wildlife conservation is definitely and effectively related to a program of soil conservation. If the Soil Conservation Service is to meet its obligations and fulfill its duties thoroughly, it must devote attention to wildlife, for practically every operation in a worthwhile erosion control program affects wildlife, either directly or indirectly. With proper direction and guidance these operations may be made beneficial to wildlife where

as where it is lacking, the same operations may prove detrimental.

The plan of attack on the problem is to attract birds and desirable species of game to the farms of the area by providing the proper environment. The important environmental factors are food, cover, water, winter shelters, roosting places, nesting facilities and some protection from natural enemies. Possibly of utmost importance at present is the establishment of an abundance and availability of food suitable to wildlife development. Along this line the service has been planting many kinds of berry-producing shrubs. The effectiveness of these shrubs which produce fleshy fruit is shown by the following figures compiled by the Department of Agriculture.

There are thirty-nine species of birds that are known to eat hackberries, fifty-two species eat mulberry, eighteen eat sassafras, forty-six eat strawberry, one hundred and eighteen eat blackberry, seventy-four eat wild cherry, one hundred and ninety-three eat sumac, forty-five eat holly, eighty-six eat dogwood berries, sixty-seven eat blueberries and twenty-eight eat black thaws. These shrubs besides supplementing the food supply for birds will eventually furnish excellent cover.

Another phase of this Department's work is Fish Pond Development. A wildlife conservation program in the Piedmont region would not be complete without giving some consideration to fish ponds and their development. What we do in this line of work will be mostly for experimental and demonstrational purposes. The plan is to have about ten fish ponds developed on each project area. The main prerequisite is that the farmers on whose land this work is contemplated be good cooperators so that when plans have been made there will be assurance of carrying them to completion.

For information pertaining to fish pond development see a representative of this Department.

John W. Hankins
Assistant Agricultural Aide.

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